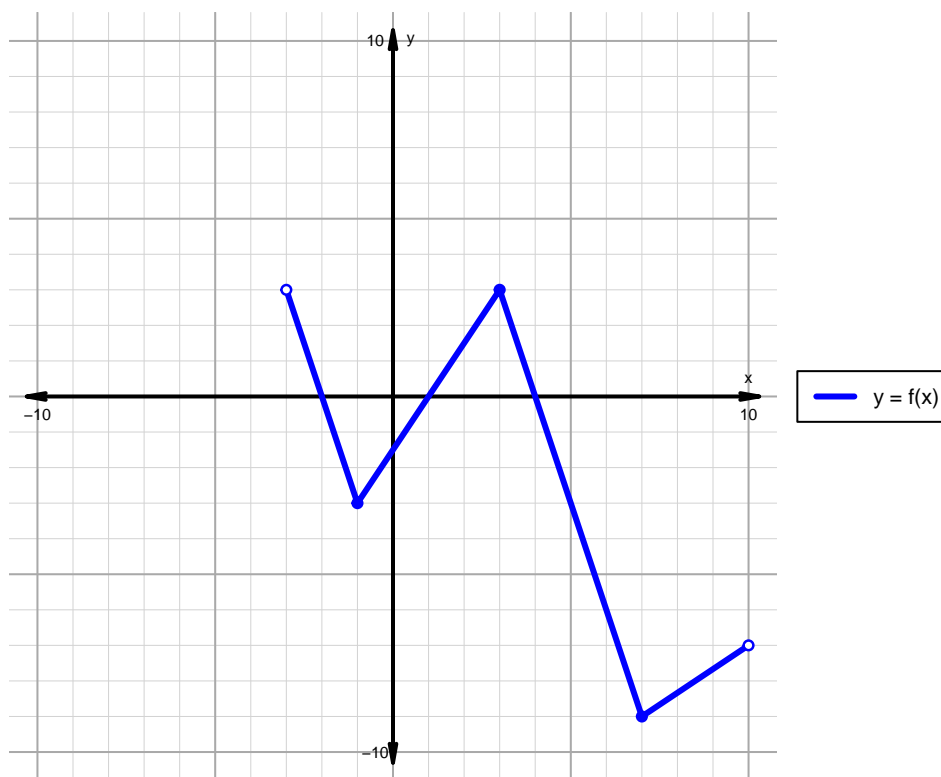


Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Intervals, Transformations, and Slope Solution (version 106)**

1. The function  $f$  is graphed below.

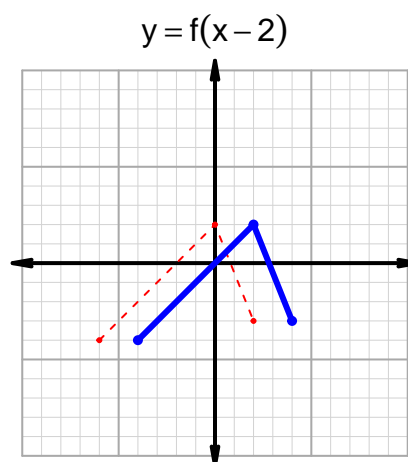
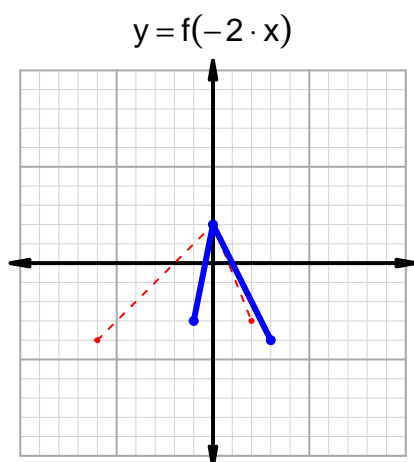
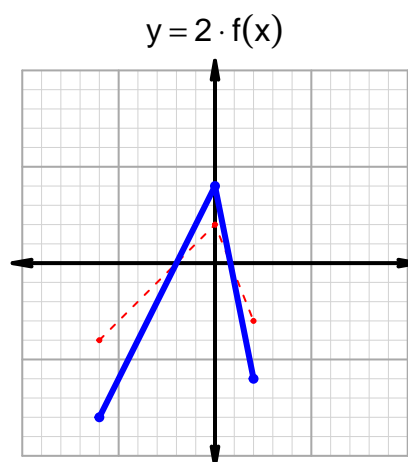
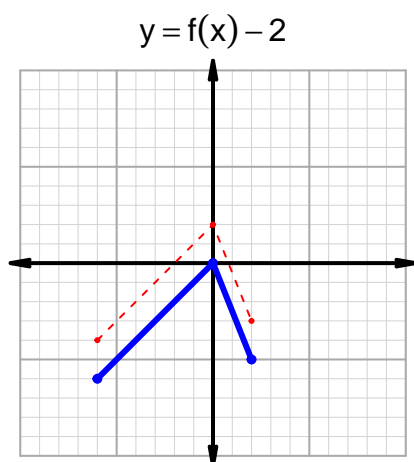


Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-3, -2) \cup (1, 4)$
Negative	$(-2, 1) \cup (4, 10)$
Increasing	$(-1, 3) \cup (7, 10)$
Decreasing	$(-3, -1) \cup (3, 7)$
Domain	$(-3, 10)$
Range	$(-9, 3)$

## Intervals, Transformations, and Slope Solution (version 106)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 41$  and  $x_2 = 59$ . Express your answer as a reduced fraction.

$x$	$g(x)$
12	59
41	12
59	93
93	41

$$\frac{f(59) - f(41)}{59 - 41} = \frac{93 - 12}{59 - 41} = \frac{81}{18}$$

The greatest common factor of 81 and 18 is 9. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{9}{2}$$